

# Air Resources Board

#### Alan C. Lloyd, Ph.D. Chairman





Mail-Out #MSO 2001-10

August 9, 2001

TO: ALL OFF-ROAD MOTORCYCLE MANUFACTURERS

ALL ALL-TERRAIN VEHICLE MANUFACTURERS

ALL OTHER INTERESTED PARTIES

SUBJECT: CERTIFICATION GUIDELINES FOR 2001 AND LATER MODEL-YEAR

(MY) OFF-ROAD MOTORCYCLES (OFMCs) AND ALL-TERRAIN

**VEHICLES (ATVs)** 

In December 1998, the Air Resources Board (ARB) amended the emission standards and test procedures for on-road motorcycles (ONMCs), OFMCs and ATVs. These amendments were approved by the Office of Administrative Law (OAL) in October 1999. For OFMCs and ATVs, the amendments include the allowance for vehicles that do not meet the emission standards to be certified for limited use in California. The emission standards and test procedures for OFMCs and ATVs that are certified as meeting the emission standards were unchanged. This Mail-Out provides an update of the ARB's certification guidelines for OFMCs and ATVs. Certification guidelines of 2001 and later MY ONMCs are provided in a separate Mail-Out (Mail-Out #MSO 2001-08, dated July 9, 2001).

- A. For certification of OFMCs and ATVs that do <u>not</u> meet the emission standards, the 1-page application format described in Mail-out #MSO 99-04 for such non-compliant vehicles remains in effect.
- B ARB's guidance for certification of <u>emission-compliant</u> OFMCs and ATVs was first described in Mail-Out #96-16. ARB's policies described in Mail-Out #96-16 for certification of emission-compliant OFMCs and ATVs remain effective.
- C. For certification of emission-compliant ATVs that use the optional test procedures of small off-road engines (SOREs), the ARB's intent and policy for such certification to be applied to the full vehicle, not just the engine that powers such vehicles, is clarified below.

Under the current, optional engine certification allowance, a manufacturer certifies and produces engines for an original equipment manufacturer (OEM) of emission-compliant ATVs. The OEM does not have to recertify its ATVs. This may possibly lead to engine stockpiling, and has resulted in the model year of the ATVs being different from that of their engines. Model year discrepancies present difficulties for ARB enforcement activities, and inequity concerns because these engine-certified ATVs may not comply with the current standard for the vehicle's model year. Further, the ARB made clear in its rulemaking for ATVs that the SORE test procedure allowance was made solely to

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our Website: <a href="http://www.arb.ca.gov">http://www.arb.ca.gov</a>.

address test procedure concerns associated with ATVs, not to permit ATV engine certification separate from certification of the vehicle in total.

Consequently, the ARB will not permit certification of ATV engines separate from the certification of the ATVs. Under this new policy, the OEM will have to certify its ATVs although such certification can continue to be achieved, at the OEM's option, by testing the engine according to the SORE test procedures. The OEM will be the manufacturer of record and certificate holder. The OEM will have to coordinate with the engine producer to ensure that its ATVs comply with the emission standards and certification requirements including those pertaining to all production running changes implemented by the engine producer. Although the OEM may make arrangements for the engine producer to submit running change requests directly to ARB and update the OEM's affected certification applications, the OEM bears the ultimate responsibility for compliance with all certification requirements. The ARB staff will adhere to this new policy for all 2002 and subsequent MY ATVs (in order to provide lead time for the affected OEMs).

D. This Mail-Out also provides a new, streamlined application format (Attachment) for certification of emission-compliant OFMCs and ATVs. Applications prepared using the new format will permit an expedient review and certification approval by ARB staff.

New OFMCs and ATVs, whether they comply with the emission standards or not, are not legal for sale and use in California until they are certified by the ARB. Violations of the certification requirement will subject the manufacturer and selling dealers to enforcement actions by the State.

E. Manufacturers are advised to ensure that the vehicle identification number (VIN) of their certified emission-compliant OFMCs and ATVs do not include the character "C" or "3" in the eighth (8<sup>th</sup>) position. Otherwise, mis-registration of such vehicles by the Department of Motor Vehicles will occur.

Concurrently, manufacturers are advised to ensure that the VIN of their certified non-compliant OFMCs and ATVs do use the character "C" or "3" in the eighth (8<sup>th</sup>) position. Violations of this VIN requirement for non-compliant OFMCs and ATVs will subject the manufacturer to enforcement actions by the State.

Should you have further questions on this matter, please contact Ms. Veronica Longhi, Air Resources Engineer, On-Road Certification / Audit Section, at (626) 575-6642 or by e-mail at <a href="mailto:vlonghi@arb.ca.gov">vlonghi@arb.ca.gov</a>.

Sincerely,

/s/

R. B. Summerfield, Chief Mobile Source Operations Division

Attachment

#### **Attachment**

# Certification Summary Sheet: Emission Compliant Off-Road Motorcycles and All-Terrain Vehicles (1 of either 2 pages)

- -- Blank Form in Word 97 Format, or
- -- Computer Print-Out Format

(Manufacturers are required to submit an electronic certification database for each engine family. For the OFMC and ATV electronic certification database program, please contact your assigned ARB certification staff. After completing the electronic certification database, the manufacturer must (1) send it electronically to the assigned ARB certification staff, and (2) print out a copy of the Certification Summary Sheet for submission with the application in lieu of filling out the Word 97 form.)

#### **Supplemental Information Form (8 pages)**

#### **Certification Database Form (12 pages)**

- -- 10 pages of computer screen format for data entry
- -- 2 pages of description of the data fields in the data entry form

CERTIFICATION SUMMARY



EMISSION COMPLIANT OFF-ROAD MCs & ATVs

ODEL-YEAR MANUFACTURER:			TURER:			EXE	CUTIVE ORDER:	
EPA-Sta	ndardized Fa	mily Name:			·			
Vehicle (	Category:		·					
	Codes within							
All Engir	ne Displaceme 2)		gine Family (		cubic centir	neters, (cc)):		
1)	2)		3)		•)			
Emission	Standards C	ompliance:			-			
If Corporate A		Designated				<u>÷</u>		
<b>Engine D a</b> . Combust				8. Intak	, · , · · · · · · · · · · · · · · · · ·	Emission Con rtreatment(s):	ntrol Systems (EC	(S):
	Oil/Fuel Ratio	)			b. Sens			
<b>b</b> . Engine T						System:		
c. Valvetra						aust Gas Recir		
	mber of Intako alves (Ports) po		st			nod of Aspirati		
	. , ,	-				njection React	ion:	
e. Type of I	Engine Coolin	g:			g. Othe	ers:		
f. Number	of Cylinders:							
g. Cylinder	Arrangement:							
<ul><li>a. Test Vehicle of</li><li>b. Equivalent In</li><li>c. Test Fuel Ty</li></ul>	or Engine: Mo nertia Mass (kg pe:	del	_ID: _ RLF(Nt): _·	Rate	ed Power, hp	o: M	Family:;Test Date: PG:	
Certification					·			
Test No.		est Results in data) (i.e., r	,	:		Certification I	emissions in ( with DFs applied)	):
and Type	НС	NOx	CO	)	НС	NOx	HC+NOx	CO
1.								
2.								
3.								
Standard:								
Remarks:								
		<b>D</b> ( ( )						
sue Date: ARB USE ONI		n Date(s):_						
Processed by:	<b>_</b>	Date:		Revi	ewed by:		Date:	

AIR RESOURCE MODEL-YEAR	_	_				OFF-ROAD MC DER: <u>U-M-</u>			
EPA-Standa     Vehicle Cate	ardized Engin	e Family (EF)	Name:						
2. Vehicle Cat	egory: OFMC	ATV-0	chassis standa	rd <i>F</i>	ATV-engine	standard	<u>.</u>		
J. All Sales Co	oaes within E	F:(check all applic	cable) California	i-Only 5	0-State	49-State Only	/		
4. All Engine [									
1)	1) 2) 3) 4)								
	5. <b>Emission Standards Compliance</b> (check one) Direct Standard Corporate Average								
6. If Corp.Avg.									
	. <b>Engine Design</b> : a. Combustion Cycle: (check one) 4-stroke 2-stroke@ Oil/Fuel Ratio								
	<ul> <li>b. Engine Type: (check one) Reciprocating Rotary Other (e.g., turbine, etc.) (specify)</li> <li>c. Valvetrain: (check one) Overhead Side Reed Valve Piston Ported Other (specify)</li> </ul>								
d. Total Numb				-					
e. Type of Eng	line Cooling: (d	check one) AIr	vvater	Otl Otl	ner (specify)_				
f. Number of (	Sylinders: (che	ck one) 1 2	345(	Opposed (F	(specify)	 Nr (====if :)			
<b>g</b> . Cylinder Arr	angement. (ch	eck one) IIIIIIe_	vee non.	Opposed (r	riat) Othe	er (specify)	·		
8. Intake, Fue	l and Emissic	on Control Sy	etome <sup>1</sup> ·						
9. <b>Deterioration</b>	on Factors (D	Fe): a New D	ura.Testing: Y	e No	Carryover f	from EE:	<u> </u>		
<b>b</b> . Dura. Eng.									
<b>d</b> . Exhaust DF									
10. Certificatio	n Test Engine	Information	: New Test	Carryover	from Engine	e Family			
a. Test Vehicle									
Rated Power	er, hp:	@ rp	om Test Dat	ie:					
<b>b</b> . Equivalent	Inertia Mass (	kg):	RLF (nt):	Tran	s:	MPG:	<u>.</u>		
c. Test Fuel: G	Basoline: Indol	ene Clear	Calif. Ph2	Oth	ner (specify)		·		
<ul><li>d. Special Tes</li></ul>	t Equipment (e	e.g., cooling fans,	special couplings,	etc.): No \	es/Describ	e:			
							<u>.</u>		
11. Certification	n Emission L	evels: HC:	Н	C+NOx:		CO:			
(Enter level fro	m confirmatory te	st, if any. If none,	enter the highest v	alue from all te	ests below.)		,		
	Off	ficial Test Res	ults -s)		Certificatio	n Emissions			
Test No.	(ra	ıw) (i.e., no DF	-s)		(i.e., with I	OFs applied)			
And Type2	(check one) g	/km, g/b	np-nr	(check	one) g/km	, g/bhp-hr	<u> </u>		
	HC	NOx	CO	HC	NOx	HC+NOx	CO		
1									
2									
3									
4									
Standard:									
Remarks:							·		

Use **prefix** "2" or "3" etc. in front of O2S, TWC, etc. to designate **parallel** arrangement, e.g., 2TWC for two TWCs in parallel. Use **suffix** "2" or "3" etc. to designate **series** arrangement, e.g., TWC(3) for three TWCs in three separate containers one after the other.

<sup>1</sup> Use SAE J1930 abbreviations. Examples: **NA** for natural aspiration; **TC** turbocharging; **SC** supercharging; **CAC** charge air cooling; **CARB** carburetion; **TBI** throttle body fuel injection; **MFI** multiport fuel injection; **SFI** sequential MFI; **DGI** direct gasoline injection; **AIR** secondary air injection; **PAIR** pulsed AIR; **EGR** exhaust gas recirculation; **O2S** oxygen sensor; **HO2S** heated O2S; **OC** for oxidation catalyst; **TWC** three-way catalyst; **OC+TWC** for OC plus TWC in one container; **EM** for Engine Modification (use if only NA and/or **CARB** are the only other selections in the field).

	D CERTIFICATION SUMMARY NUFACTURER:				
Issue Date:	Revision Date(s):				
ARB USE ONLY					
Processed by:	Date:	Reviewed by:	Date:		

Е	ingine Family:	ne: LIANT OFF-ROAD MC & AT	 V SUPPLEMENTAL INFO	Page: Issued: Revised: E.O.#: _U-M-		
S0	<ul><li>a. Number of C</li><li>b. Number of B</li><li>c. Feedback Co</li></ul>	R Yes No arburetors: arrels per Carburetor: ontrol: Yes No /es No	e. Fast Idle Circuit: Yes _ f. Other Subsystems (sports) g. Used in previous/other If yes, last model year	engine model: No Yes		
S0:	a. Type (e.g., TBI	TON: Yes No I, DGI, MFI, SFI, etc.): ttion (e.g., manifold, cylinder, pr ious/other engine models:	b. Feedback Control: Yes re-chamber, throttle body): : No Yes If yes, last ye	ear used:		
S0:	3. CRANKCASE a. Type (e.g., PC b. Routing: Air	V valve, uncontrolled flow, crank	case scavenging for 2-stroke engines) fold Inlet Ports (2-Stroke Eng	: ines) Other (specify)		
S0	<ul><li>a. Type: Heated</li><li>b. Location: Pol</li></ul>	NSOR: Yes No d Unheated Ot rt Exhaust Manifold ious/other engine models:	her (specify) Other (specify) No Yes If yes, last ye	 ear used:		
S0:	<ul><li>a. Type: Pump</li><li>b. Point of Inject</li><li>c. Method of Mod. Sensed Para Throttle Posi</li></ul>	odulation: Vacuum S ameters (check all applicable): tion Other (specify)	PAIR) lanifold Other (specify) olenoid Coolant Temp Engine RP	M MAP		
	Throttle Pos b. Method of Mo c. Used in prev	ition Other (specify) odulation: Vacuum s vious/other engine models	GR): Yes No : Coolant Temp Engine R  Solenoid :: No Yes If yes, last y ITI-TAMPERING MEASURES			
Parameter Adjustable Range (or N/A) Tamper Resistance Method Approval Reference (or N/A)						

Model Year:	Page:
Manufacturer Name:	Issued:
Engine Family:	Revised:
EMISSION-COMPLIANT OFF-ROAD MC & ATV SUPPLEMENTAL INFO	E.O.#: U-M-

## S08. AUXILIARY EMISSION CONTROL DEVICES (AECD)<sup>3</sup> AND DEFEAT DEVICES<sup>4</sup>

### TABLE A: Sensed Parameters<sup>5</sup> versus Controlled Parameters<sup>6</sup>

Sensed Parameter	Sensor		Control Para	meters	
Jensed Farameter	Sensor				

#### TABLE B: Justifications for AECDs

Para	meters			
Controlled	Sensed	Device	Justifications / Notes	

<sup>3</sup> **AECD**: any element of design which senses temperature, vehicle speed, engine RPM, transmission gear, manifold vacuum, or any other parameter for the purpose of activating, modulating, delaying, or deactivating the operation of any of the emission control system.

<sup>4</sup> **Defeat Device**: An AECD that reduces the effectiveness of the emission control system under conditions that may reasonably be expected to be encountered in normal operation and use, unless (1) such conditions are substantially included in the emission test procedure, (2) the need for the AECD is justified in terms of protecting the engine against damage or accident, or (3) the AECD does not go beyond the requirements of engine starting. A pending engine family that is shown to contain a defeat device will not be certified. A certified engine family that is found to contain a defeat device will subject the manufacturer to enforcement actions.

<sup>5</sup> Examples of Sensed Parameters: atmospheric pressure, crankshaft position, engine RPM, cylinder position, coolant temperature, intake air temperature, intake manifold pressure, throttle position, oxygen concentration in exhaust gas, vehicle speed, knocking, EGR valve position, shift position of transmission, etc.

<sup>6</sup> Examples of Controlled Parameters: fuel metering, ignition timing, idle speed, EGR valve, secondary air injection pump or valve, etc.

M	odel Year: anufacturer Name: ngine Family: _ MISSION-COMPLIANT OFF-ROAD MC & ATV SUPPLEMENTAL INFO	Page:   Issued:   Revised:   E.O.#: _U-M
S09	a. Type/Number/Arrangement (e.g., TWC, OC, 2TWC for 2 parallel, TWC) b. Location (e.g., close coupled, exhaust manifold, muffler): c. Catalyst Manufacturer.: d. Substrate: (i) Volume: cc (ii) Construction: Pellet Number of cells: (per cm²) (iii) Composition: Ceramic Metallic (iv) Containment e. Active Material:	Honeycomb
	Composition (Pt, Pd, Rh): Ratio:	Loading (g/L)
	CONFIDENTIAL	
S10	). PROJECTED SALES AND PRODUCTION PERIOD	CONFIDENTIAL
	a. Projected California Annual Sales (units): Proj b. Estimated Production Period: Start Date: End c. Estimated Introduction into Commerce Date:	Date:

Model Year:	Page:
Manufacturer Name:	Issued:
Engine Family:	Revised:
EMISSION-COMPLIANT OFF-ROAD MC & ATV SUPPLEMENTAL INFO	E.O.#: <u>U-M-</u>

S11. MODEL SUMMARY (Use an asterisk (\*) to identify worst-case vehicle or engine model used for certification testing.)

S12.	S13.		S14.		S15.	S16.	S17.	S18.	S19.	S20.
Vehicle Model	Engine Code	((	Sales Codes (Check ALL Engappropriate) Disp	Eng. Displ.	Rated Power	er Speed	Trans. (e.g., M5,	EIM (kg)	RLF (nt)	
		Calif. Only	49- State	50- State	(cc)	(hp)	(RPM)	A3, CVT)		

Model Year: Manufacturer Name: Engine Family: EMISSION-COMPLIANT		NTAL INFO	Page: Issued: Revised: E.O.#: _U-M-			
S21. EMISSION-RELATED PART NUMBERS (Part numbers as stamped on the component, not the stock or inventory numbers, should be listed here.)						
			Vehicle Model			
Fuel System:						
Carb/Mixer Assy.						
Fuel Injector						
Fuel Pump						
ECM						
Pressure Regulator						
Oxygen Sensor						
Other (specify)						
Intake System:						
Air Cleaner Element						
Intake Manifold						
Turbocharger						
Supercharger						
Charge Air Cooler						
Other (specify)						
Ignition System:						
Spark Plug						
Ignition Coil						
Ignition Control Valve Module						
Distributor						
Other (specify)						
EGR:						
EGR Valve Assembly						
Vacuum Control Valve						
Air Injection						
Control Valve						
Check Valve						
Solenoid Valve						

Aftertreatment System:

Catalyst
Exhaust Manifold
Crankcase System:
PCV Valve

Model Year: Manufacturer Name: Engine Family: EMISSION-COMPLIANT OFF-ROAD MC & ATV SUPPLEMENTAL INFO	Page: Issued: Revised: E.O.#: <u>U-M-</u>					
S22. LABELING: Emission label format approved? No Yes If yes, reference approval: Sample label attached? No Yes (put label in #S23)						
S23. ADDITIONAL INFORMATION AND COMMENTS						

Model Year: Manufacturer Name: Engine Family: EMISSION-COMPLIANT OFF-ROAD MC & A		PPLEMENTAL INFO	Revis	: ed: sed: f: _U-M-
OFMC	X	S24. CORPORA ATV-chassis standard		RAGE PLAN ATV-engine standard
		SAMPLE	FORM	-

## **CONFIDENTIAL**

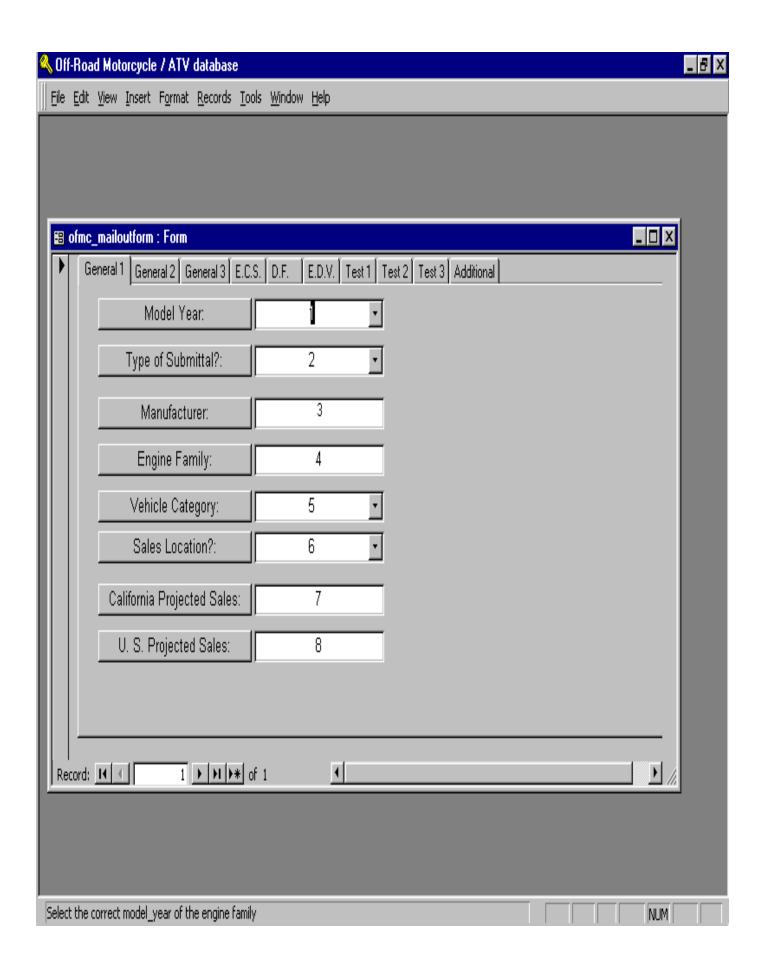
Manufacturer: <u>ABC Motorcycle Co.</u>

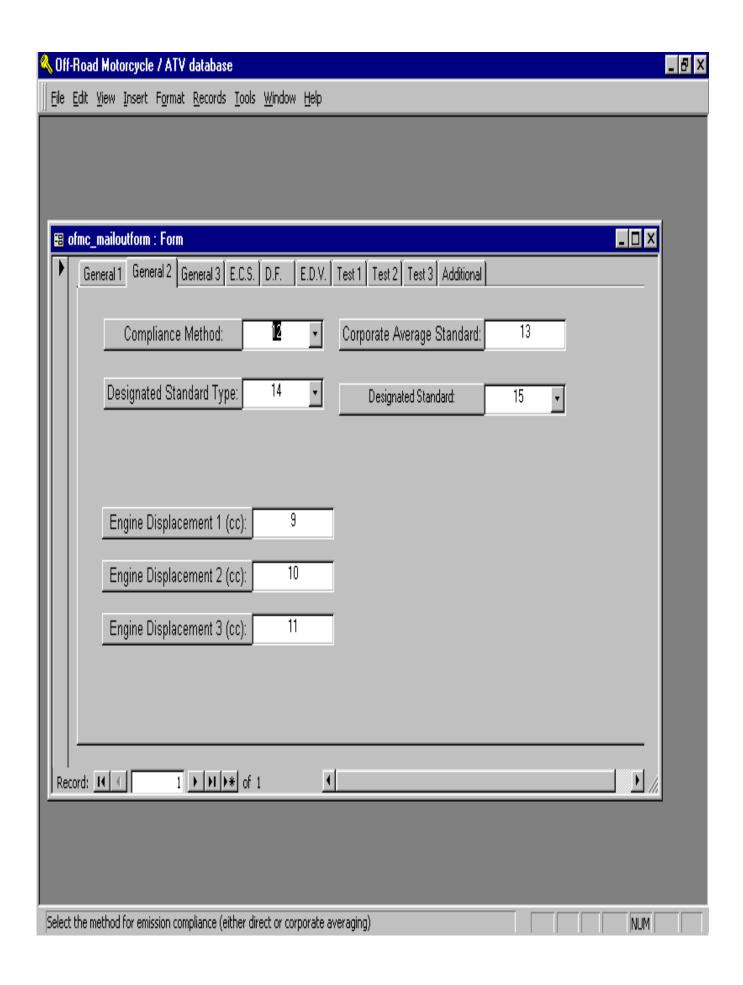
2001 Model-Year Certification Plan and Estimated Production Volumes

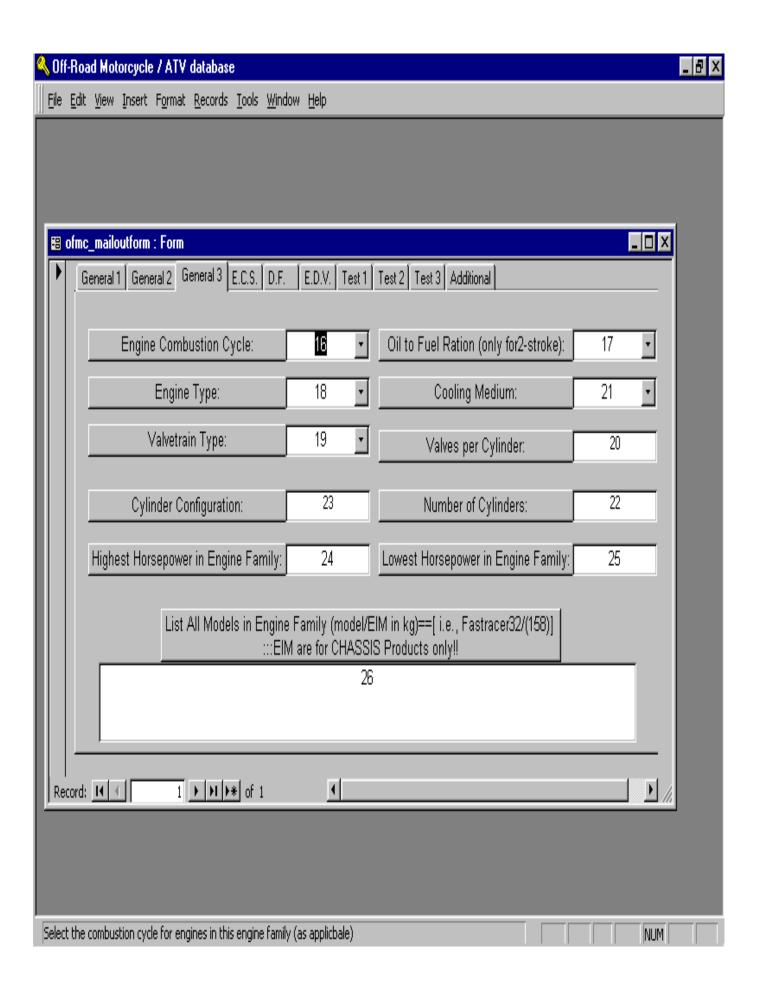
(1)	(2)	(3)	(4)	(5)	(6)
Engine Family	Models	Estimated Production Volume (Units)		Designated HC or HC+Nox	(3) x (5)
Engine Family	Models	Family	Model	(g/km or g/bhp-hr)	(0) \( \( \( \) \)
YXZXC.700ABC		30		1.6	48
	711K		10		
	723B		10		
	747A		10		
YXZXC.850DEF		58		1.2	69.6
	850B		13		
	850C		45		
YXZXC1.34GHJ		39		0.9	35.1
	345X		23		
	450W		16		
YXZXC2.00KLM		54		0.8 (HC+NOx)	43.2
	200J		54		
TOTALS:		181			195.9

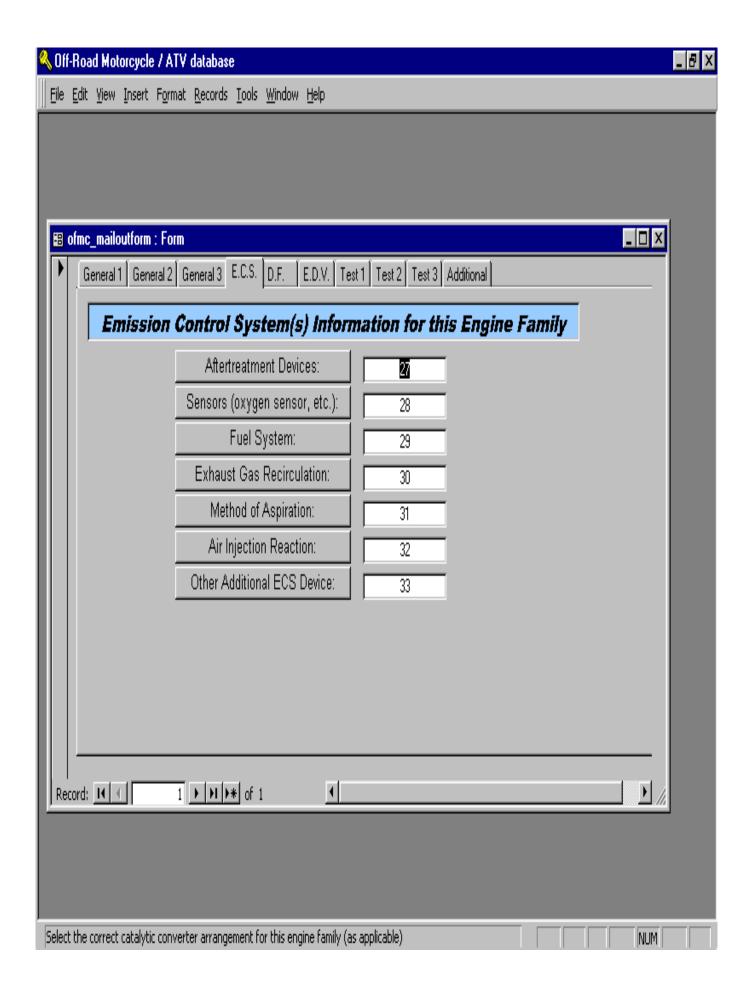
ESTIMATED CORPORATE AVERAGE EMISSION VALUE =  $\Sigma$  (6) /  $\Sigma$  (3) = 195.9/181 = 1.08 g/km  $\le$  1.2 g/km,  $\therefore$  PASS

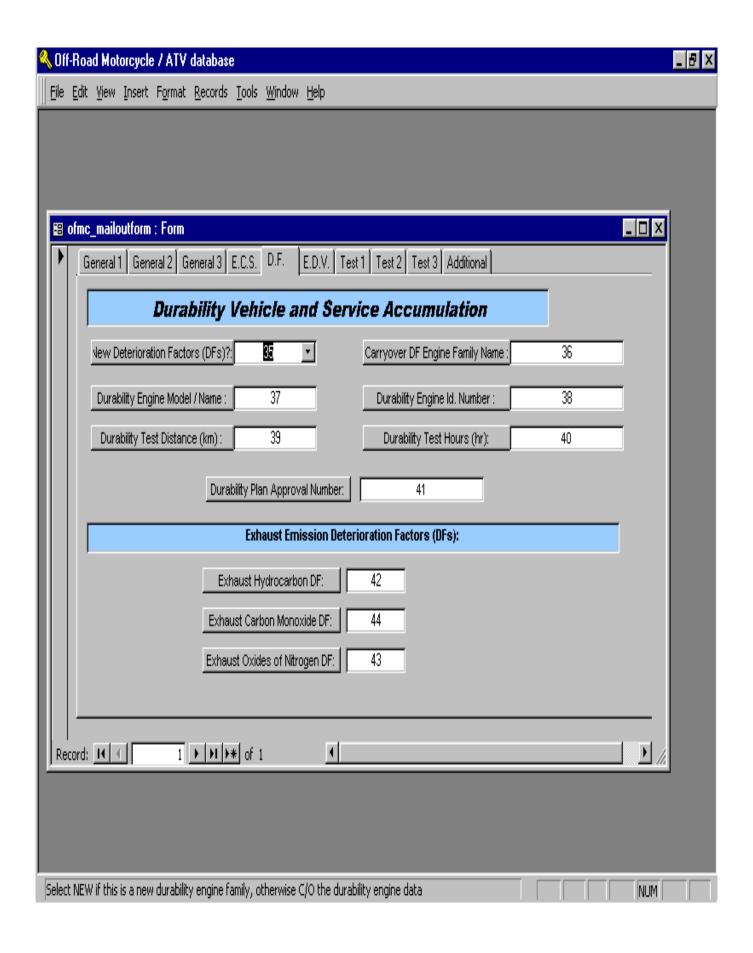
Manu Engir	el Year: Ifacturer Name: ne Family: SION-COMPLIANT OFF			L INFO	Page: Issued: Revised: E.O.#: _U-M-	
		S24. CORPORATE AVERAGE PLAN				
		OFMC	OFMC ATV-chassis standard ATV-engine standard			
		CONFIDENTIAL				
		Manufact	urer Model-Year Cer	tification Plar	and Estimated Production V	/olumes
	(1)	(2)	(3)	(4)	(5)	(6)
	Engine Family	Models	Estimated Production Volume (Units)		Designated HC or HC+Nox	(3) x (5)
	Lingine raining	Wodelo	Family	Model	(g/km or g/bhp-hr)	(0) \( \( \( \( \) \)
	TOTALS:					
ECT	IMATED CORPORAT		SSIONI WALLE	- \(\sigma(6) \) \(\sigma(2)\)	) -	
<b>⊑</b> 31	IIVIA I ED CORPORA I	I E AVERAGE EIVII	SSION VALUE	- Z (U) / Z (3)	, –	
Issu	Issue Date:, Revision Date(s):					

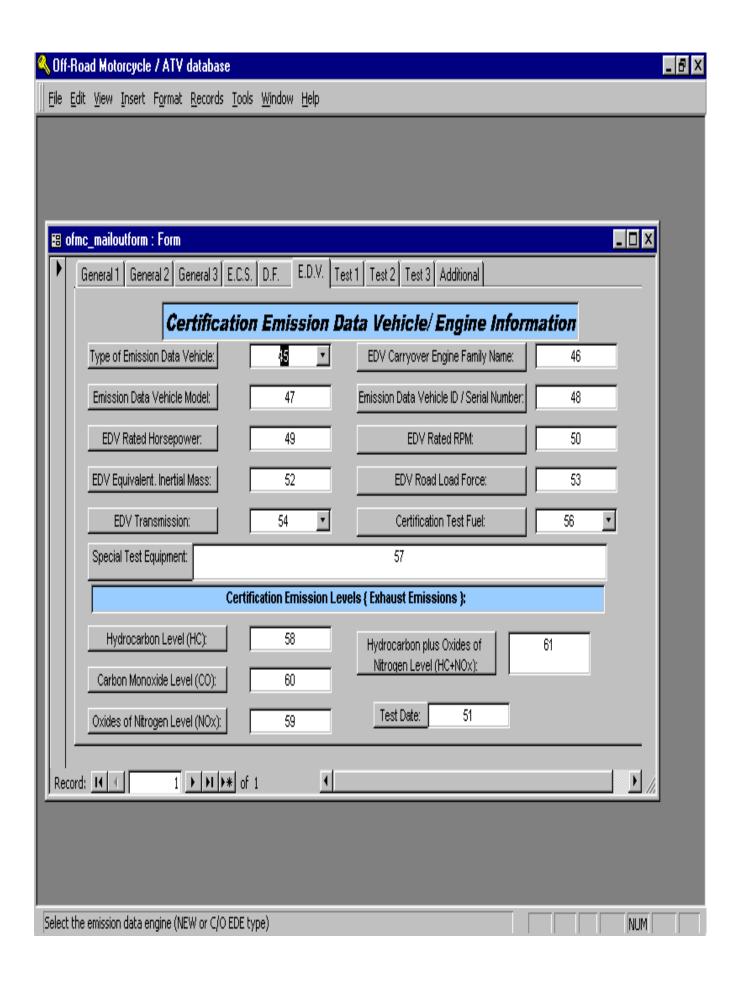


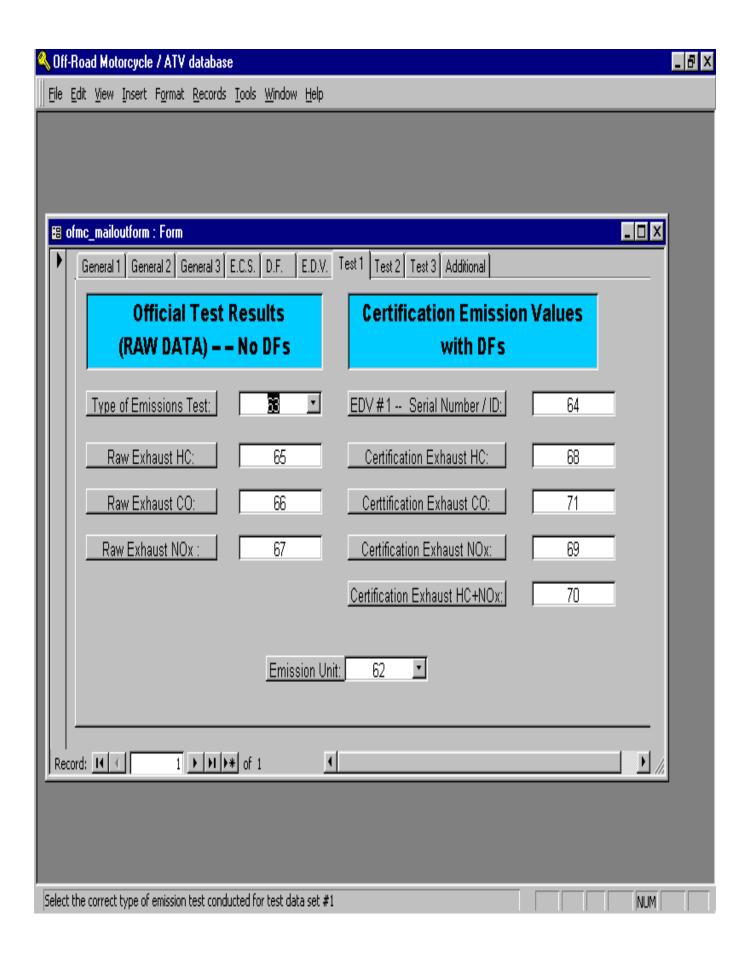


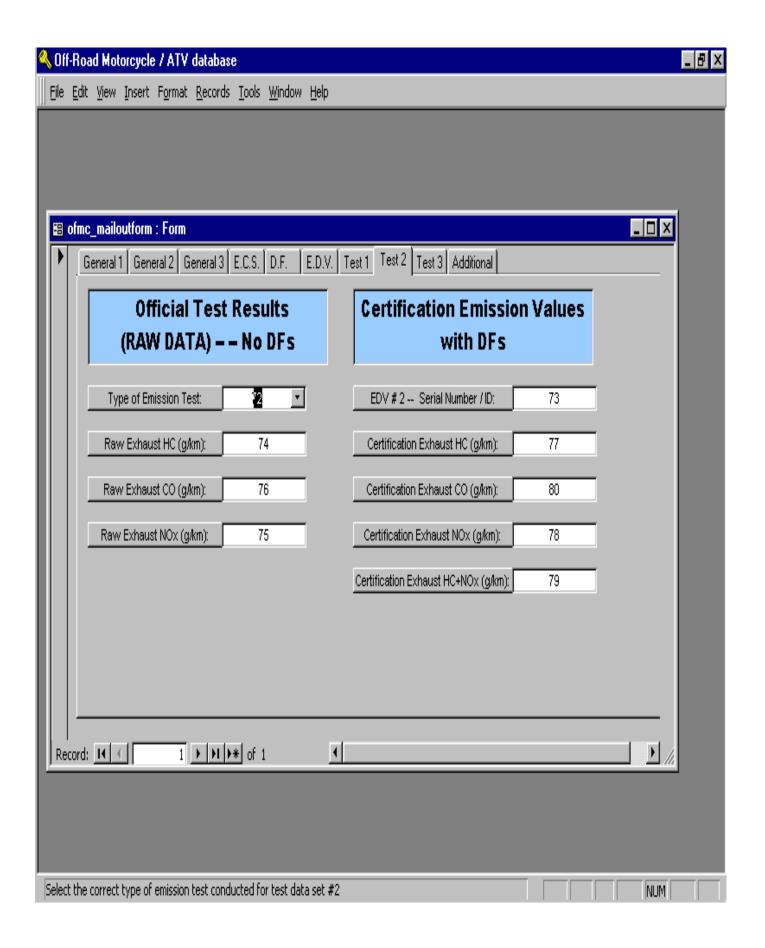


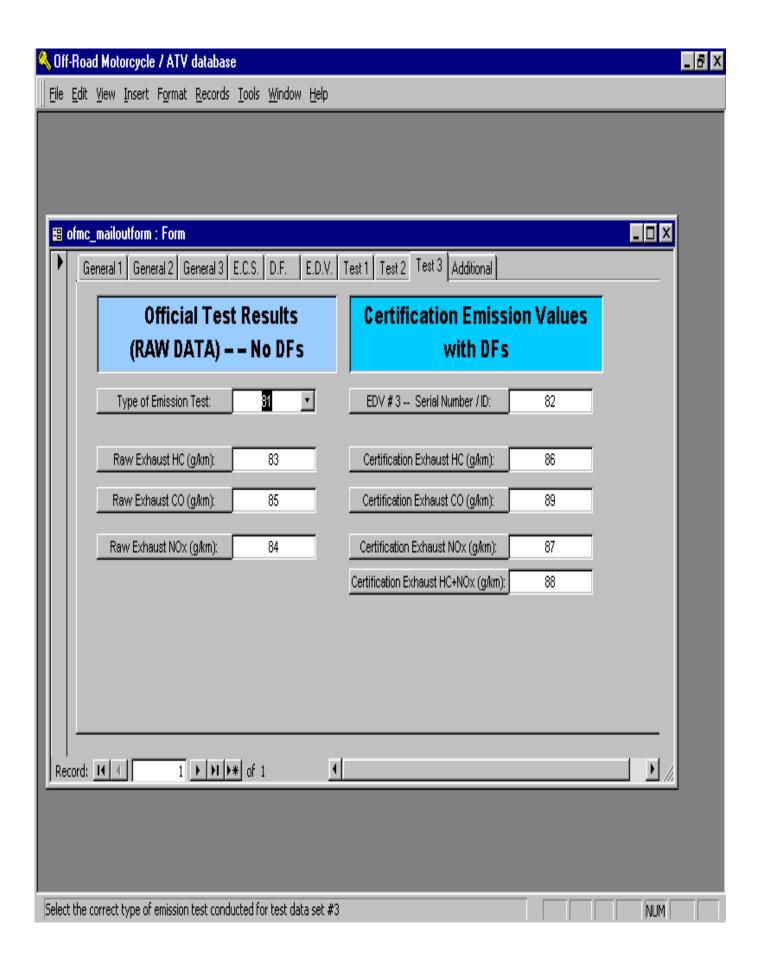


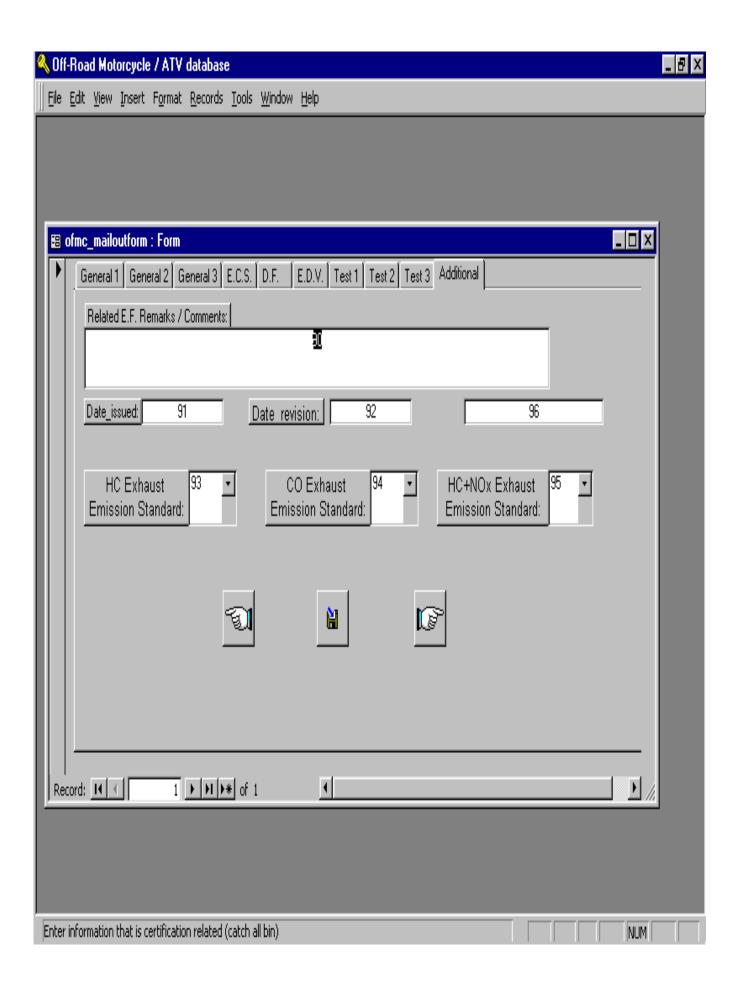












Item	Name	Туре	Size	Data Entry Type:
No:	model vees	Nicoshar (Lang)	4	Dropdown / type-in
1	model_year	Number (Long)	4	Dropdown
2	SUBMIT_CODE	Text	4	Dropdown
3	MFR_CODE	Text	50	Dropdown
4	ENG_FAM	Text	12	Type-in
5	Veh_Cat	Text	12	Dropdown
6	SALES_CODE	Text	5	Dropdown
7	PROJ_SALE	Number (Double)	8	Type-in
8	us_proj_sale	Number (Double)	8	Type-in
9	DISP_1	Number (Double)	8	Type-in
10	DISP_2	Number (Double)	8	Type-in
11	DISP_3	Number (Double)	8	Type-in
12	EM_STD_COMP	Text	3	Dropdown
13	CORP_AVG_STD	Text	4	Dropdown
14	DESIG_STD_TYPE	Text	6	Dropdown
15	DESIG_STD	Text	3	Type-in
16	ENG_COM_CYC	Text	11	Dropdown
17	OFR_2stroke	Text	2	Dropdown
18	ENG TYPE	Text	15	Dropdown
19	valvetrain	Text	12	Dropdown
20	VALV CYL	Text	1	Dropdown
21	COOL MED	Text	5	Dropdown
22	CYLINDER	Text	1	Dropdown
23	CYC_CONFIG	Text	8	Dropdown
24	HI ENG hp	Number (Double)	8	Type-in
25	LO ENG hp	Number (Double)	8	Type-in
26	eng_models	Text	250	Dropdown
27	ECS_Aftertreatment_ID	Number (Long)	4	Dropdown
28	ECS_Antertreatment_ID	Number (Long)	4	Dropdown
29			4	
30	ECS_FuelSystem_ID ECS_EGR_ID	Number (Long)	4	Dropdown
		Number (Long)	4	Dropdown
31 32	ECS_Aspiration_ID	Number (Long)	4	Dropdown
32	ECS_AIR_ID	Number (Long)	4	Dropdown
33	ECS Others ID	Number (Long)	4	Dropdown
34	ECS EO Genarate	Text	250	Type-in
35	DF_new?	Text	3	Dropdown
36	DF EF	Text	12	Type-in
37	DF_eng_model	Text	32	Type-in
38	DF eng id	Text	20	Type-in
39	DF eng km	Number (Double)	8	Dropdown
40	DF eng hr	Number (Double)	8	Type-in
41	DF_approval_number	Text	15	Type-in
42	HC DF	Number (Double)	8	Type-in
43	NOx DF	Number (Double)	8	Type-in
44	CO DF	Number (Double)	8	
45		Text	3	Type-in Dropdown
	CERT_EDE_type			
46	CERT_EDE_co	Text	12	Type-in
47	CERT_EDE_model	Text	15	Type-in
48	CERT_EDE_id	Text	20	Type-in
49	CERT_EDE_hp	Number (Double)	8	Type-in
50	CERT_EDE_rpm	Number (Long)	4	Type-in

51	CERT EDE date	Date/Time	8	Type-in
52	CERT EDE EIM	Number (Double)	8	Type-in
53	CERT EDE RLF	Number (Double)	8	Type-in
54	CERT EDE Trans	Text	2	Dropdown
55	CERT EDE MPG	Number (Double)	8	Type-in
56	CERT TEST FUEL	Text	10	Dropdown
57	CERT TP equip	Text	250	Type-in
58	CERT_HC_Hi	Number (Double)	8	Type-in
59	CERT_NOx_Hi	Number (Double)	8	Type-in
60	CERT_CO_Hi	Number (Double)	8	Type-in
61	CERT_HC+NOx_Hi	Number (Double)	8	Type-in
62	CERT_unit	Text	8	Dropdown
63	RawDATA_EDV_TYPE1	Text	3	Dropdown
64	RawEDV1	Text	20	Type-in
65	RawDATA_EDV_1_HC	Number (Double)	8	Type-in
66	RawDATA_EDV_1_NOx	Number (Double)	8	Type-in
67	RawDATA_EDV_1_CO	Number (Double)	8	Type-in
68	CertDATA_EDV_1_HC	Number (Double)	8	Type-in
69	CertDATA_EDV_1_NOx	Number (Double)	8	Type-in
70	CertDATA_EDV_1_HC+NOx	Number (Double)	8	Type-in
71	CertDATA_EDV_1_CO	Number (Double)	8	Type-in
72	RawDATA_EDV_TYPE2	Text	3	Dropdown
73	RawEDV2	Text	20	Type-in
74	RawDATA_EDV_2_HC	Number (Double)	8	Type-in
75	RawDATA_EDV_2_NOx	Number (Double)	8	Type-in
76	RawDATA_EDV_2_CO	Number (Double)	8	Type-in
77	CertDATA_EDV_2_HC	Number (Double)	8	Type-in
78	CertDATA_EDV_2_NOx	Number (Double)	8	Type-in
79	CertDATA_EDV_2_HC+NOx	Number (Double)	8	Type-in
80	CertDATA_EDV_2_CO	Number (Double)	8	Type-in
81	RawDATA_EDV_TYPE3	Text	3	Dropdown
82	RawEDV3	Text	20	Type-in
83	RawDATA_EDV_3_HC	Number (Double)	8	Type-in
84	RawDATA EDV 3 NOx	Number (Double)	8	Type-in
85	RawDATA_EDV_3_NOX	Number (Double)	8	Type-in
86	CertDATA EDV 3 HC	Number (Double)	8	Type-in
87	CertDATA_EDV_3_NOx	Number (Double)	8	Type-in
		, ,	8	
88 89	CertDATA_EDV_3_HC+NOx CertDATA_EDV_3_CO	Number (Double) Number (Double)	8	Type-in Type-in
		· /		7.
90	Remarks_all	Text	250	Type-in
91 92	Date_issued	Date/Time	8	Type-in
	Date_revision	Date/Time	8	Type-in
93	STD_CERT_HC	Text	4	Dropdown
94 95	STD_CERT_CO	Text	4	Dropdown Dropdown
	STD_CERT_HC+NOx	Text Deta/Time	4	•
96	sys_date	Date/Time	8	Type-in